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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,843	11/13/2003	Alexander Krymski	M4065.0960/P960	4875
24998	7590	10/19/2005	EXAMINER	
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP			LUU, THANH X	
2101 L Street, NW			ART UNIT	
Washington, DC 20037			PAPER NUMBER	
			2878	

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/705,843

Applicant(s)

KRYMSKI, ALEXANDER

Examiner

Thanh X. Luu

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>04/2004; 03/2005.</u> | 6) <input type="checkbox"/> Other: ____.  |

Art Unit: 2878

**DETAILED ACTION**

***Specification***

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: providing the reference voltage from the common operational amplifier-based charge sensing circuit.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 18, 19 and 28-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 18 and 19, it is unclear how signals are combined, yet the combining comprises subtraction. That is, subtracting conflicts with the term "combining."

Regarding claim 28, "respective capacitive elements" lacks proper antecedent basis. Furthermore, it is unclear how the capacitive elements are related to the rest of the invention.

The other claims are indefinite based on their dependencies.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 2, 6, 10, 13, 14, 16, 18, 20, 25-28 and 31, as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Pain et al. (WO 99/482281).

Regarding claims 1, 2, 6, 10, 13, 14, 16, 18, 20, 25-28 and 31, Pain et al. disclose (see Figs. 1, 2 and page 6, lines 17-30) an image sensor readout circuit and method, comprising: a column line for receiving a plurality of analog pixel (signal) and analog reset (reset) signals; and a binning circuit (CIS, CIR, various switches) coupled to the column line, which combines a predetermined plurality of analog pixel signals and outputs them on a first output line, and combines a predetermined plurality of analog reset signals and outputs them on a second output line. Pain et al. further disclose first and second sample circuits (CIS, CIR) for storing the plurality of signals and first and second switches (respective CS switches) for combining or interpolating as claimed. Furthermore, since correlated double sampling takes place the signals (signal and reset) are subtracted. In addition, Pain et al. disclose (see Fig. 2) column switches (one CB for each respective column readout circuit) and an op-amp (A or AO) as claimed. Pain et al. also disclose (see Fig. 2) setting a reference voltage (V+) on first sides of

respective capacitive elements (CLS, CLR) and coupling the signal and reset values to second sides of the capacitive elements.

7. Claims 1-14, 16, 18, 20-22, 24-28 and 31-33, as understood, are rejected under 35 U.S.C. 102(e) as being anticipated by Sakurai et al. (U.S. Patent 6,850,278).

Regarding claims 1-14, 16, 18, 20-22, 24-28 and 31-33, Sakurai et al. disclose (see Figs. 1-3) an image sensor readout circuit and method, comprising: a column line for receiving a plurality of analog pixel (signal) and analog reset (noise) signals; and a binning circuit (see Fig. 1) coupled to the column line, which combines a predetermined plurality of analog pixel signals ( $S1 + S2$ ) and outputs them on a first output line, and combines a predetermined plurality of analog reset signals ( $N1 + N2$ ) and outputs them on a second output line. Sakurai et al. further disclose first and second sample circuits (CTN1, CTN2, CTS1, CTS2 with respective switches) for storing the plurality of signals and first and second switches (MTH1, MTH2; MTH3, MTH4) for combining or interpolating as claimed. Sakurai et al. also disclose (see Fig. 1) the first sample circuit comprises: a first plurality of sample switches (MTN1, MTN2); and a first plurality of capacitive elements (CTN1, CTN2), wherein each of the sample switches are coupled to a respective capacitive element, and the second sample circuit as claimed. Sakurai et al. further disclose subtracting (with A). In addition, Sakurai et al. disclose (see Fig. 16) a plurality of column readout circuits (at 101) and setting a reference voltage (ground) on first sides of the capacitive elements as claimed.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 19 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pain et al. or Sakurai et al.

Regarding claim 19, Pain et al. and Sakurai et al. disclose the claimed invention as set forth above. Pain et al. and Sakurai et al. do not specifically disclose calculating color separation. However, calculating color separation is well known. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to calculate color separation as claimed in the method of Pain et al. or Sakurai et al. as desired for improved color processing.

Regarding claim 29, Pain et al. and Sakurai et al. disclose the claimed invention as set forth above. Pain et al. and Sakurai et al. do not specifically disclose the reference voltage is the voltage from the operational amplifier. However, consolidating voltage sources in a circuit is well known. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the same reference voltage as claimed in the method of Pain et al. or Sakurai et al. to reduce the cost and size of the circuit.

10. Claims 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over either one of Pain et al. or Sakurai et al. in view of Okamoto (U.S. Patent Application Publication 2003/0193580).

Regarding claims 15 and 17, Pain et al. and Sakurai et al. disclose the claimed invention as set forth above. Pain et al. and Sakurai et al. do not specifically disclose sampling identical colors or taking into account a Bayer pattern. Okamoto teaches (see Fig. 4) sampling identical colors that take into account a Bayer pattern. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to sample identical colors and take into account a Bayer pattern as claimed in the method of Pain et al. or Sakurai et al. in view of Okamoto improve reduced resolution color detection and imaging as taught.

11. Claims 23 and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakurai et al. in view of Applicant's Admitted Prior Art (Fig. 3), hereinafter, AAPA.

Regarding claims 23 and 34-36, Sakurai et al. disclose the claimed invention as set forth above. Sakurai et al. do not specifically disclose the reference voltage is the voltage from the operational amplifier. AAPA teaches using a plurality of switches (108, 109) to hold one side of a capacitor or charge storage element and first switches (103, 104) as claimed. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide such a sampling configuration as claimed in the apparatus and method of Sakurai et al. effectively carry out sampling and reset the capacitor afterwards.

### ***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X. Luu whose telephone number is 571-272-2441. The examiner can normally be reached on M-F 6:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thanh X Luu  
Primary Examiner  
Art Unit 2878

10/2005